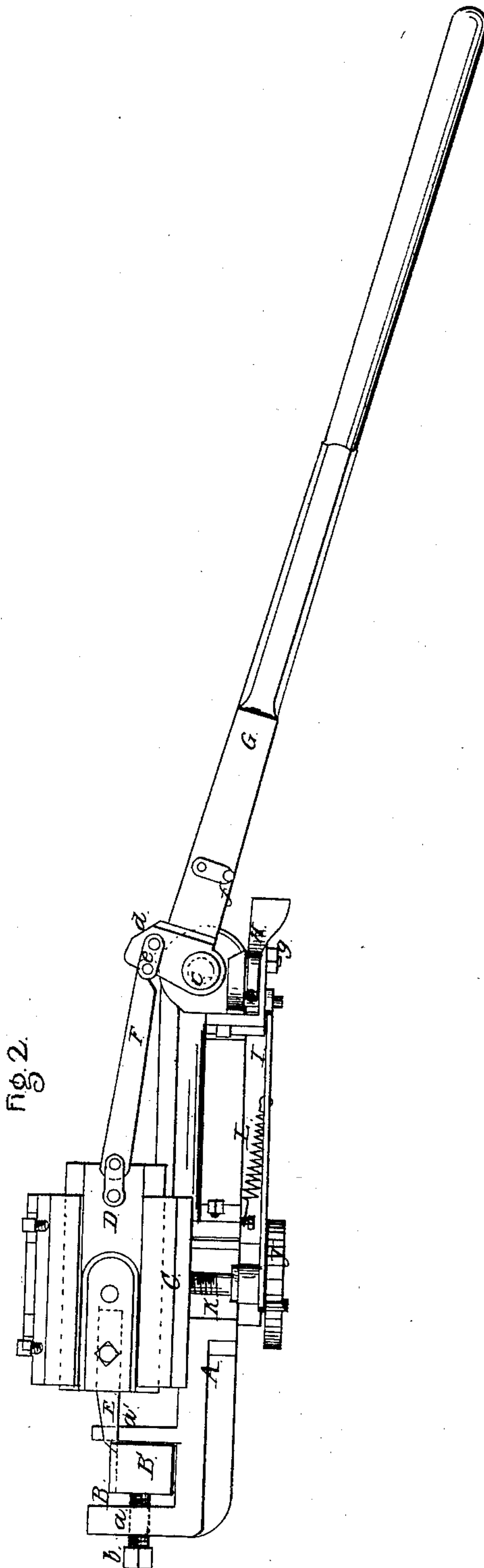
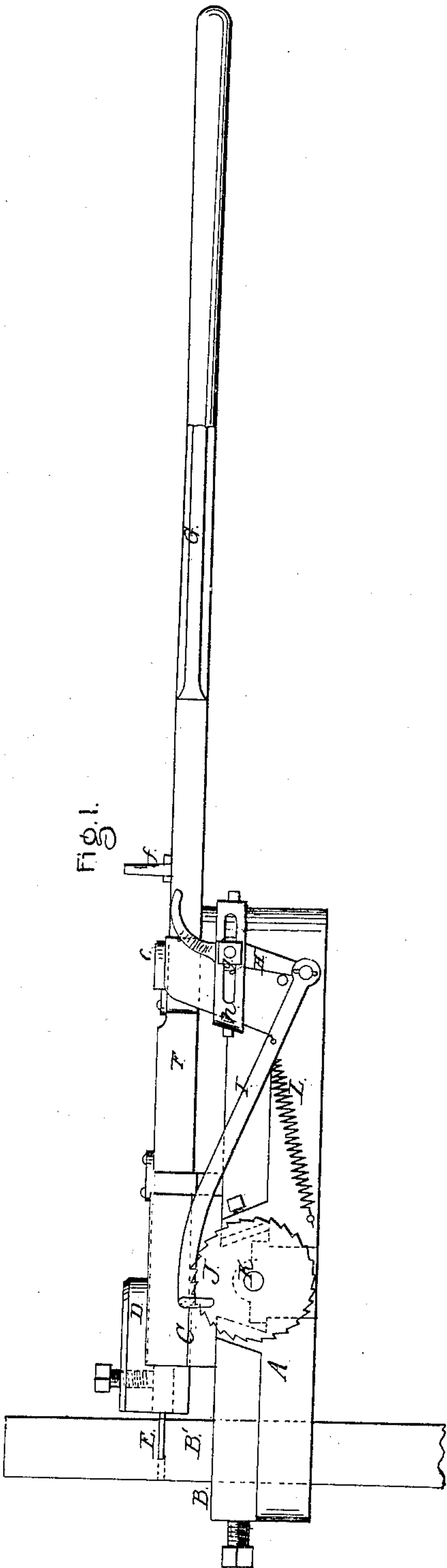


D. R. KNOWLES.
MACHINE FOR CUTTING METAL BARS.

No. 21,567.

Patented Sept. 21, 1858.



UNITED STATES PATENT OFFICE.

DANIEL R. KNOWLES, OF CENTER GROTON, CONNECTICUT.

MACHINE FOR CUTTING METAL BARS.

Specification of Letters Patent No. 21,567, dated September 21, 1858.

To all whom it may concern:

Be it known that I, D. R. KNOWLES, of Center Groton, in the county of New London and State of Connecticut, have invented
5 a new and Improved Implement or Device for Cutting Metal Bars; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making
10 a part of this specification, in which—

Figure 1, is a side view of my invention. Fig. 2, is a plan or top view of ditto.

Similar letters of reference indicate corresponding parts in the two figures.

15 The object of this invention is to obtain a portable machine, and one that may be operated by a small expenditure of power, for cutting metal bars transversely with a clean, smooth cut.

20 The invention is designed for the use of blacksmiths, repairers of rail-roads and others who cannot employ large machinery for such purpose, and consists in attaching a proper cutting tool to a reciprocating slide
25 which is connected with a lever and fitted in a rest which has an automatic feed motion given it by the movement of the lever, the whole being arranged as hereinafter described.

30 To enable those skilled in the art to fully understand and construct my invention I will proceed to describe it.

A, represents a metal bed piece at one end of which a clamp B, is formed in which the
35 bar B', to be cut is firmly secured. This clamp B, may be formed of two projecting arms *a*, *a'*, extending at right angles from the bed piece A, and having a screw *b*, one or more passing through the outer arm *a*,
40 see Fig. 2.

C, is a block or rest which is fitted in a transverse dove tail groove in the bedpiece A, and is allowed to slide freely therein.
45 In the upper surface of the block or rest C, a slide D, is fitted longitudinally and allowed to move freely, and in the front end of the slide D, the cutting tool E, is secured, said tool being of chisel form as shown plainly in Fig. 2. The back end of the slide
50 D, is connected by a rod F, with a lever G, which has its fulcrum at *c*, the rod F, being

attached to a bar *d*, of the lever G, so as to throw the connection *e*, at one side of the fulcrum *c*, see Fig. 2. To the lever G, and near its fulcrum *c*, a vertical pin *f*, is at-
55 tached, and to one side of the bed-piece A, a lever H, is attached by a fulcrum pin *g*, the latter being fitted in a slotted bar *h*, attached to the bed piece. To the lower end of the lever H, a pawl I, is attached, said
60 pawl catching into a ratchet J, on the outer end of a screw shaft K, which is fitted transversely in the bed piece A, and passes through a rest at the bottom of the block or rest C.
65

L, is a spring by which the pawl I, is kept in proper working position.

The operation is as follows:—The bed piece A, is secured in a proper position by any proper means and the bar B', to be cut
70 is firmly secured in the clamp B, in such position that the tool E, will cut the bar in two at the proper or desired point, and the block or rest C, is so adjusted that the tool E, will take a thin shaving off the outer side of bar
75 B'. The operator then grasps the lever G, and in shoving it in the direction indicated by arrow 1, the tool E, will cut a thin shaving off the bar B', and as the lever is moved back in the direction indicated by arrow 2,
80 the tool E, will be drawn back, and the pin *f*, will strike the upper end of lever H, and the pawl I, will actuate the ratchet J, and turn the screw shaft K, a certain distance, the screw shaft moving the slide C, and
85 tool E, inward in the direction indicated by arrow 3, so that the tool E, may take a succeeding shaving from the bar as it is again moved forward. This movement is repeated until the bar B', is severed, the feed move-
90 ment of the tool E, being regulated so as to take off a thicker or thinner shaving according to the strength of the operator or as may be desired, by adjusting the fulcrum pin *g*, of the lever H.
95

By this invention a very portable and efficient machine is obtained, and one that will prove highly valuable where heavy machines cannot be advantageously and profitably
100 used. The bars are cut in two very smoothly without being defaced or injured so as to require any after labor.

Having thus described my invention what I claim as new and desire to secure by Letters Patent, is,

The bedpiece A, provided with the clamp
5 B, block or rest C, slide D, having the cutting tool E, attached and connected with the lever G, in combination with the automatic feed movement formed of the adjustable

lever H, pawls I, ratchet J, and screw shaft K, connected with block or rest C, the whole 10 being arranged to operate conjointly as and for the purpose set forth.

DANIEL R. KNOWLES.

Witnesses:

HIRAM WILLEY,
JOHN FITCH.